

EXHIBIT A

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

SINGULAR COMPUTING LLC,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

C.A. No. 1:19-cv-12551-FDS

EXPERT REPORT OF MIRIAM LEESER, PH.D.
REGARDING INVALIDITY

Executed on 12/20/2022

DocuSigned by:

Miriam Leeser, Ph.D.

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Miriam Leeser, Ph.D.

Technology's (MIT) Lincoln Laboratories, which is a federally funded research and development center affiliated with MIT and operated by the U.S. Department of Defense, and which was chartered to apply advanced technology to problems of national security.

16. I am an author or co-author of over 180 refereed publications, including 45 peer-reviewed published journal articles, as well as the book *Hardware Specification, Verification, and Synthesis: Mathematical Aspects*. I have been an invited speaker at over 70 conferences, symposia, and workshops on topics within my area of research and expertise. I have received extensive recognition for my published research in the areas of high performance computing and reconfigurable hardware, including various best paper awards; for example, for my paper "Accelerating Matrix Processing for MIMO Systems" with Jieming Xu at the International Symposium on Highly Efficient Accelerators and Reconfigurable Technologies (HEART 2021), and my paper "FINN-R: An End-to-End Deep-Learning Framework for Fast Exploration of Quantized Neural Networks," which was published in ACM Transactions on Reconfigurable Technology and Systems (TRETs), Special Section on Deep Learning on FPGAs, Vol. 11, Issue 3 (December 2018), and received a best paper award from ACM TRETs in 2020.

17. I am also a named inventor on U.S. Patent No. 4,967,344, which is titled "Interconnection Network for Multiple Processors" and generally relates to techniques for connecting a large number of independent processors together using a packet-based network (data bus) to allow very high-throughput data transfer between the processors. This patent arose from my time working in industry (at Codex Corp.).

18. Additional information regarding my background, qualifications, and experience, including a list of publications, conference and symposium presentations, and talks, can be found in my *curriculum vitae*, which is attached as **Exhibit B**.

III. SUMMARY OF OPINIONS

19. For the reasons set forth in the body of this report, it is my opinion that claim 53 of the '273 patent is invalid as anticipated due to the claimed invention being known or used by

others in this country before the priority date of the Asserted Patents, being in public use in this country more than one year prior to the priority date for the Asserted Patents, and/or being previously made in this country by another inventor who had not abandoned, suppressed, or concealed the invention, based on the creation, public availability, public disclosure, public knowledge, and public use of and regarding VFLOAT and its use on FPGA hardware. In addition, it is my further opinion that, even if claim 53 of the '273 patent is not anticipated, the claimed invention would have been obvious to a person having ordinary skill in the art at the time based on the creation, public availability, public disclosure, public knowledge, and public use of and regarding VFLOAT in combination with FPGA hardware available at the time of the claimed invention.

20. Likewise, it is my opinion that claim 7 of the '156 patent is invalid as anticipated due to the claimed invention being known or used by others in this country before the priority date of the Asserted Patents, being in public use in this country more than one year prior to the priority date for the Asserted Patents, and/or being previously made in this country by another inventor who had not abandoned, suppressed, or concealed the invention, based on the creation, public availability, public disclosure, public knowledge, and public use of and regarding VFLOAT and its use on FPGA hardware. In addition, it is my further opinion that, even if claim 53 of the '273 patent is not anticipated, the claimed invention would have been obvious to a person having ordinary skill in the art at the time based on the creation, public availability, public disclosure, public knowledge, and public use of and regarding VFLOAT in combination with FPGA hardware available at the time of the claimed invention

IV. APPLICABLE LEGAL STANDARDS

21. I am not an attorney and have no formal legal training. I have been informed of the relevant legal standards that apply in evaluating the validity of a patent from Google's attorneys and am relying on those instructions for these legal standards. Below I describe my understanding of these legal standards.